AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for controlling a synchronous permanent magnet multiple-phase motor, the motor having multiple phases and having a rotor, the method comprising ~~the steps of~~:

[[-]] controlling [[the]] drive ~~current~~ currents supplied to [[each]] the phases of the motor [[phase]] by turning [[it]] the drive currents off at a predetermined frequency[[,]];

[[-]] measuring, at said predetermined frequency, [[the]] induced voltages of at least two of the [[motor]] phases of the motor, when the [[power]] drive currents in said at least two of the phases of the motor ~~phase is~~ are turned off, with a sensitivity ~~allowing to obtain~~ sufficient for obtaining significant ~~voltages~~ voltage values at a near-zero speed of the rotor;[[,]]

[[-]] determining ~~the rotor~~ a position and/or a ~~the rotor~~ speed of the rotor ~~from signals resulting~~ from said measured induced voltages[[,]];

[[-]] ~~entering said determined rotor~~ filtering the position and/or the ~~said determined rotor~~ speed of the rotor [[into]] with a state filter ~~which delivers~~ to obtain a filtered rotor position and/or a filtered rotor speed[[,]]; and

[[-]] adjusting the drive ~~current as a function of said~~ currents according to the filtered rotor position and/or the filtered rotor speed.

2. (Currently Amended) The method according to claim 1, wherein the state filter is ~~arranged~~ configured so as to take into account that when the speed of the [[motor]] rotor is very low, the position of the rotor [[can]] does not change substantially over a short period of time.

3. (Original) The method according to claim 2, wherein said state filter is a Kalman filter.

4. (Currently Amended) The method according to any of claims 1 to 3, wherein the ~~measured~~ position, θ, of the rotor is determined by the formula

$$\theta = \operatorname{arctg}\left(\frac{Ua}{Ub}\right),$$

where Ua is ~~equal to~~ the measured induced voltage in one of the phases of the motor [[phase]] and Ub is equal to $\frac{V2 - V3}{\sqrt{3}}$, $V2$ and $V3$ being the measured induced voltages in two others of the ~~other two~~ phases of the motor.

5. (Currently Amended) The method according to ~~any of claims~~ claim 1 [[to 4]], wherein the ~~measured~~ speed of the rotor is determined by computing [[the]] a square root of [[the]] a sum of squares of the measured induced voltages.

6. (Currently Amended) The method according to ~~any of claims~~ claim 2 [[to 5]], wherein the [[said]] state filter implements an algorithm such as

$$X = X_{-1} + (a * V * T + b * dP) \div 2,$$

where X is [[the]] an estimated position of the rotor at time t,

X_{-1} is [[the]] an estimated position of the rotor at time t_{-1},

~~Xm is the measured position using back EMF voltages at time t_m with ($t_{-1} \leq tm \leq t$),~~

V is [[the]] a measured speed of the rotor using back EMF voltages at time t_m,

T is [[the]] a time duration between ~~2 successive measurements (~~t_{-1} and t[[)]],

dP is the difference between Xm and X_{-1}, wherein Xm is a measured position of the rotor using back EMF voltages at time t_m with $t_{-1} \leq tm \leq t$, and the [[such]] difference dP is ~~being however~~ limited to $\pm(c * VT + d)$, and

a, b, c and d are coefficients which depend on characteristics of the motor ~~characteristics~~.

7. (Currently Amended) An electronic device for controlling a synchronous permanent magnet motor [[(1)]] with at least one phase, a coil, a rotor, and a motor driver [[(2)]], the electronic device comprising:

detection means ~~(3), which are~~ connected to the at least one phase ~~phases (A, B, C)~~ of the motor ~~and deliver~~ for generating signals that represent induced voltages of the at least one phase of the motor ~~phases~~, said detection means having a ~~high enough~~ gain ~~to provide significant output~~ such that the signals representing the induced voltages are significant even if [[the]] a speed of the rotor is near-zero[[,]]; and

a control circuit [[(4)]] connected to said detection means and to the motor driver ~~(2), which supplies~~ for supplying driving currents to the motor, said control circuit comprising means for generating signals representing a ~~computing the~~ position and/or

[[the]] a speed of the rotor from the ~~output~~ signals ~~provided by said detection means~~ representing the induced voltages.

8. (Currently Amended) The electronic device according to claim 7, wherein the motor includes at least two phases, and wherein said detection means ~~comprise~~ comprises, for each of the at least two phases ~~phase of the motor,~~:

a differential amplifier ~~(31, 32, 33) the~~ having inputs ~~of which are~~ connected to two of the at least two ~~different~~ phases of the motor; and

an analog-to-digital converter ~~(34, 35, 36) to convert the~~ for converting an analog signal outputted by said differential amplifier into a digital signal~~, which is applied~~ and providing said digital signal to said control circuit.

9. (Currently Amended) The electronic device according to claim 7 or claim 8, wherein the control circuit further comprises a state filter for filtering the signals representing the position and/or the speed of the rotor ~~motor determined from the output signals of said detection means~~.

10. (Currently Amended) The electronic device according to claim 9, wherein said state filter is a Kalman filter.

11. (New) The method according to claim 4, wherein the speed of the rotor is determined by computing a square root of a sum of squares of the measured induced voltages.

12. (New) The method according to claim 4, wherein the state filter implements an algorithm such as

$X = X_{-1} + (a * V * T + b * dP) \div 2$,

where X is an estimated position of the rotor at time t,

X_{-1} is an estimated position of the rotor at time t_{-1},

V is a measured speed of the rotor using back EMF voltages at time t_m,

T is a time duration between t_{-1} and t,

dP is the difference between Xm and X_{-1}, wherein Xm is a measured position of the rotor using back EMF voltages at time t_m with $t_{-1} \leq tm \leq t$, and the difference dP is limited to $\pm(c * VT + d)$, and

a, b, c and d are coefficients which depend on characteristics of the motor.

13. (New) The method according to claim 5, wherein the state filter implements an algorithm such as

$X = X_{-1} + (a * V * T + b * dP) \div 2$,

where X is an estimated position of the rotor at time t,

X_{-1} is an estimated position of the rotor at time t_{-1},

V is a measured speed of the rotor using back EMF voltages at time t_m,

T is a time duration between t_{-1} and t,

dP is the difference between Xm and X_{-1}, wherein Xm is a measured position of the rotor using back EMF voltages at time t_m with $t_{-1} \leq tm \leq t$, and the difference dP is limited to $\pm(c * VT + d)$, and

a, b, c and d are coefficients which depend on characteristics of the motor.